FIG. 1

MAC Architecture of IEEE 802.17 Lite based on MSR

A Data Node

Various Tributary Services
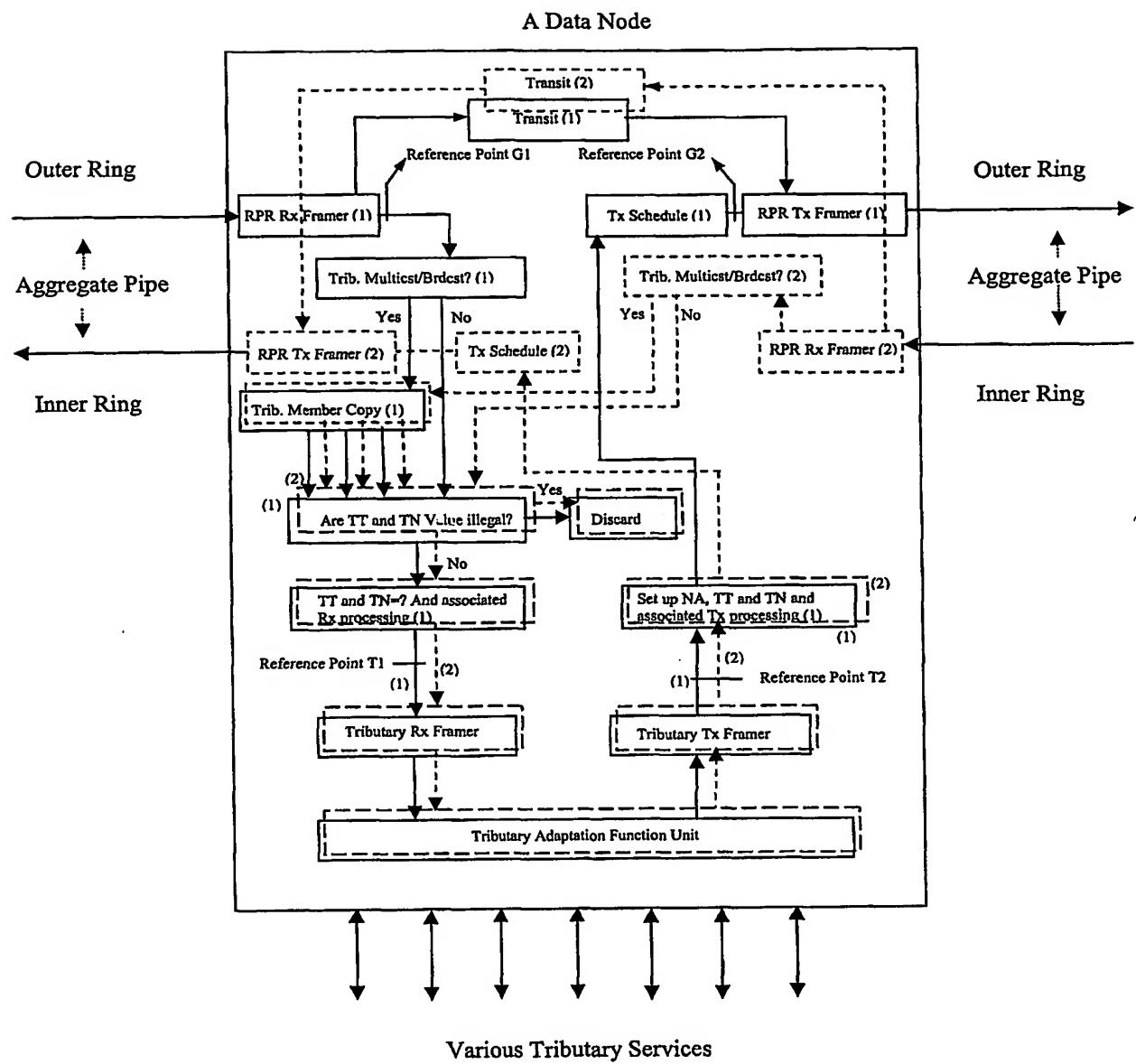
FIG. 2

Tx and Rx Diagram of a Data Node

DVB   ISDN   G.702   Ethernet   CS & NM

L3 packet forwarding

Reference Point T1/T2

XP Frame of MSR based on RPR lite

Reference Point G1/G2

IEEE 802.17 MAC DATA FRAME
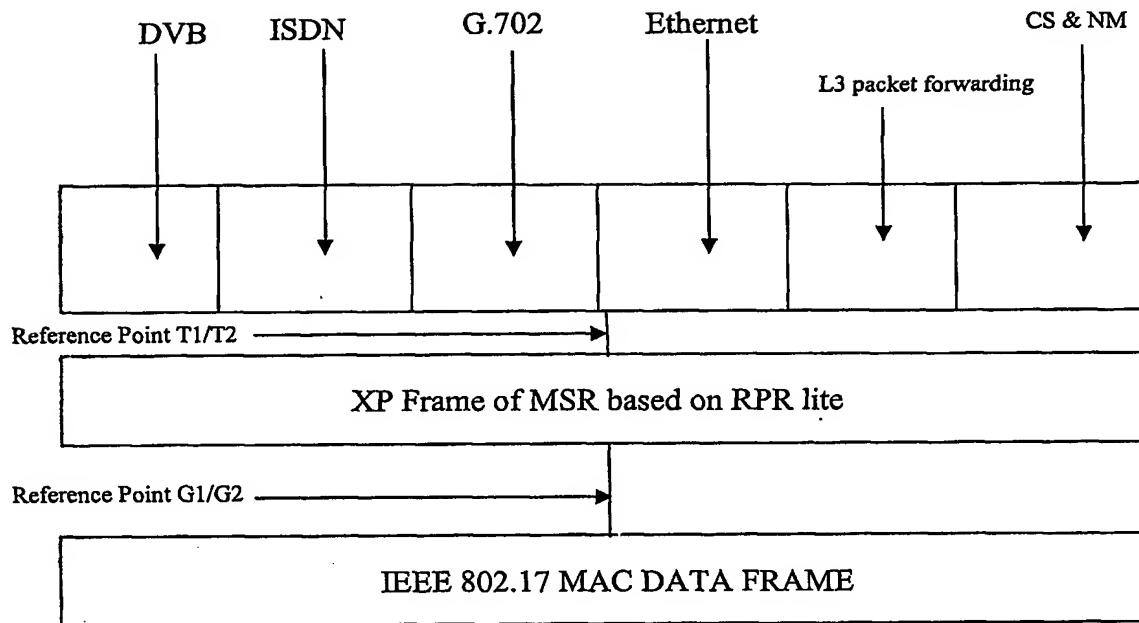
Fig. 3

Generic Protocol Stack of MSR Based on RPR Lite

Upper Layer of XP

XP UNACK-Data Request   XP UNACK-Data Indication

XP Frame of MSR based on RPR lite

MAC Data Request   MAC Data Indication

IEEE802.17 MAC DATA FRAME
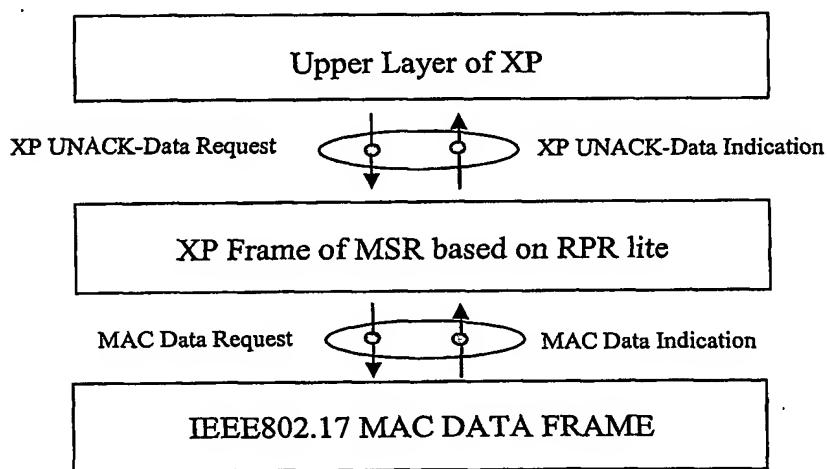
Fig. 4

Relationship between XP and RPR MAC, Upper Layer and XP
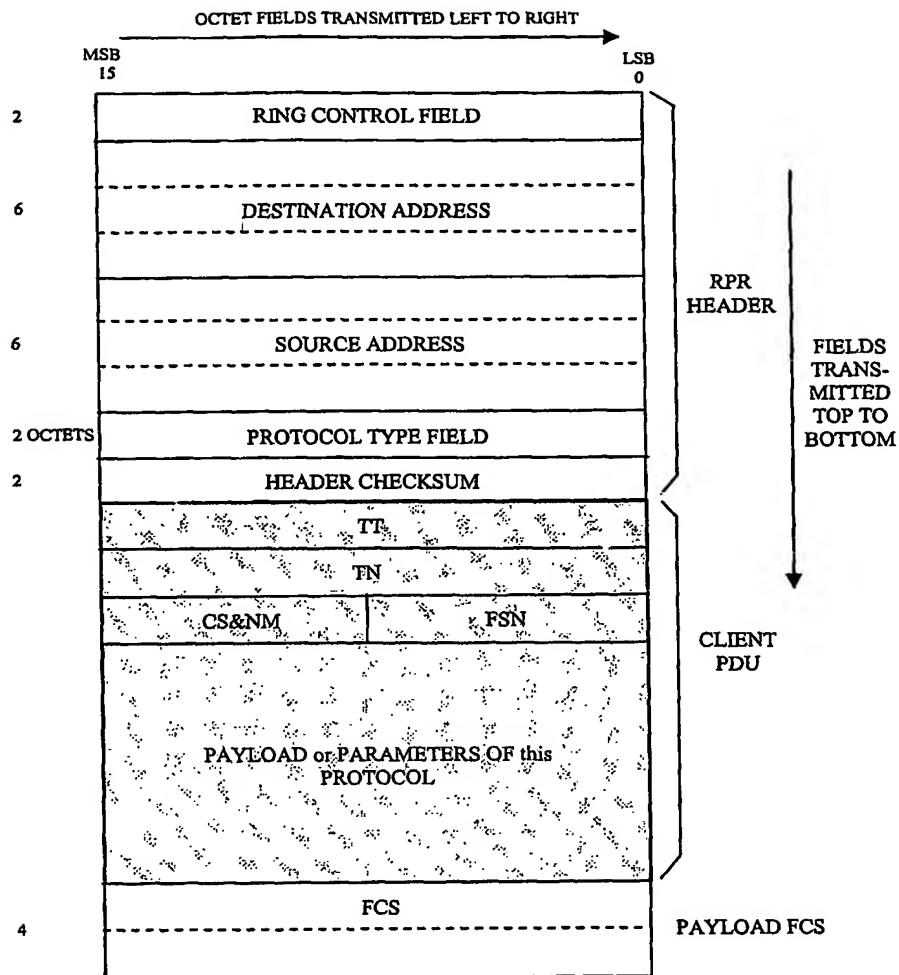
FE field = "0", PT field = "3", Protocol type field is a fixed value.

Fig. 5

Generic Frame Format

TCCR ID =TNi ID +

0 1	2 3 4 5 6 7 8 9 0 1 2 3 4 5
01	14-bit Length field

+TNj ID +TNk ID+TNm ID ......
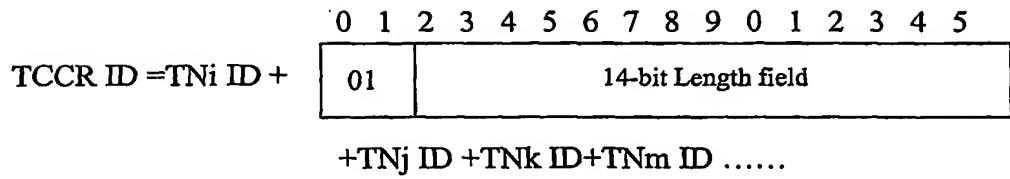
Node based multicast/broadcast Mode

TCCR ID =TNi ID +

0 1	2 3 4 5 6 7 8 9 0 1 2 3 4 5
01	14-bit Length field

+TNj ID

Unicast Mode
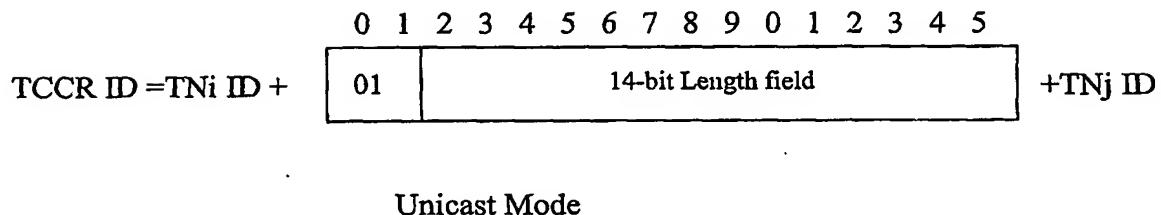
Fig. 6

Expressions of TN ID and TCCR ID

TCE Layer (Transport Bit-Stream)

Reference Point T1/T2 ──────────►

XP frame of MSR Based on RPR Lite

Reference Point G1/G2 ──────────►
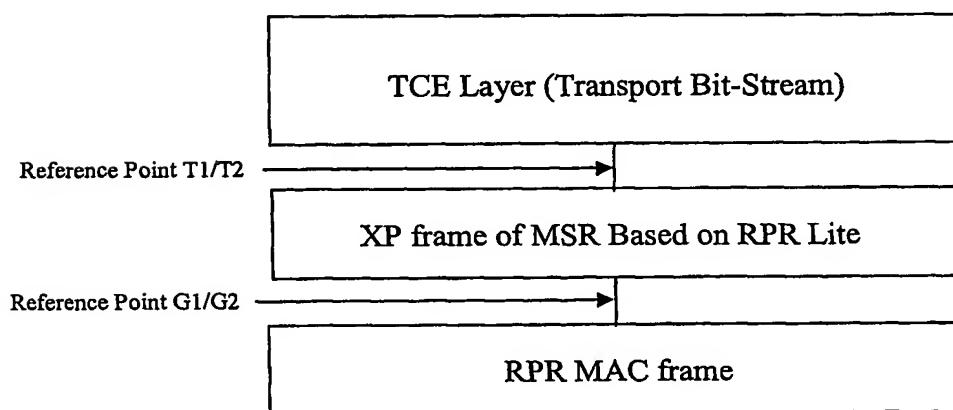
RPR MAC frame

FIG. 7

TDM SERVICE CHANNEL OVER RPR MAC FRAME USING XP
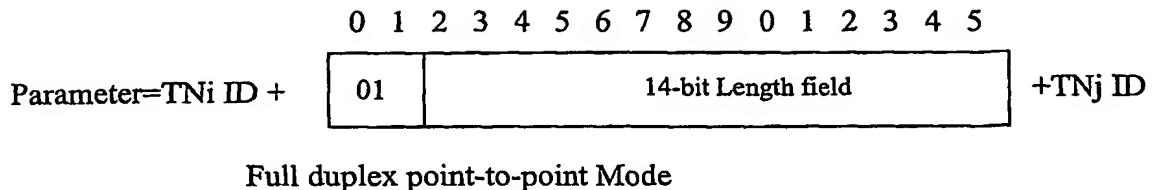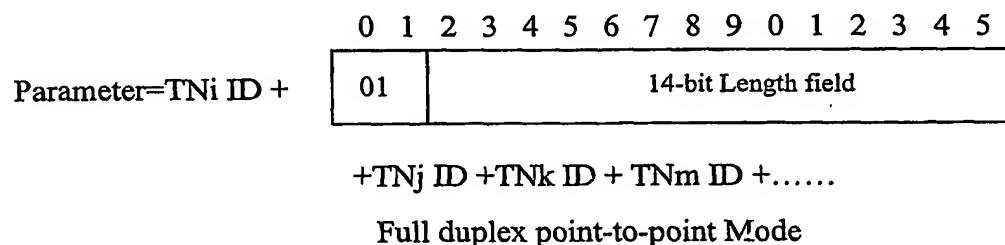
Parameter=TNi ID +

```
  0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
 ┌────┬──────────────────────────────┐
 │ 01 │      14-bit Length field      │  +TNj ID
 └────┴──────────────────────────────┘
```

Full duplex point-to-point Mode

Fig. 8

Expressions of 1+1 and 1:1 tributary protection parameters

Parameter=TNi ID +

```
  0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
 ┌────┬──────────────────────────────┐
 │ 01 │      14-bit Length field      │
 └────┴──────────────────────────────┘
```

+TNj ID +TNk ID + TNm ID +......

Full duplex point-to-point Mode

Fig. 9

Expressions of 1:N tributary protection parameter

Parameter=TNi ID +

```
  0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
 ┌────┬──────────────────────────────┐
 │ 01 │      14-bit Length field      │  +TNj ID
 └────┴──────────────────────────────┘
```

Full duplex point-to-point Mode

Fig. 10

Expressions of 1+1 and 1:1 tributary protection parameters

Parameter=TNi ID +

```
  0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5
 ┌────┬──────────────────────────────┐
 │ 01 │      14-bit Length field      │
 └────┴──────────────────────────────┘
```

+TNj ID +TNk ID + TNm ID +......

Full duplex point-to-point Mode
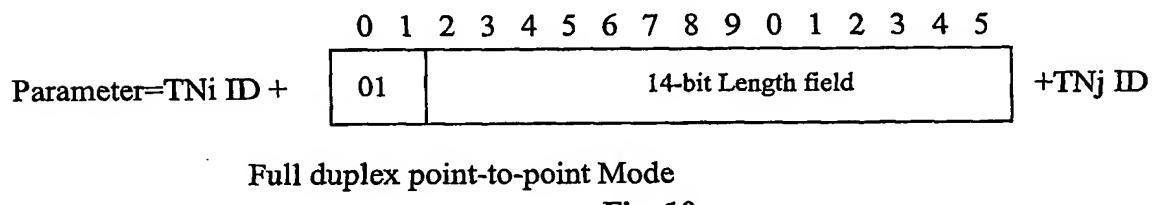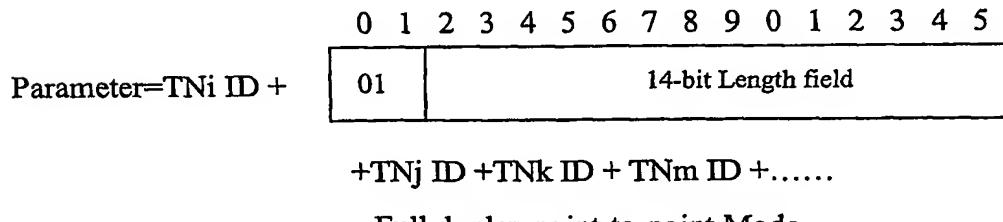
Fig. 11

Expressions of 1:N tributary protection parameter
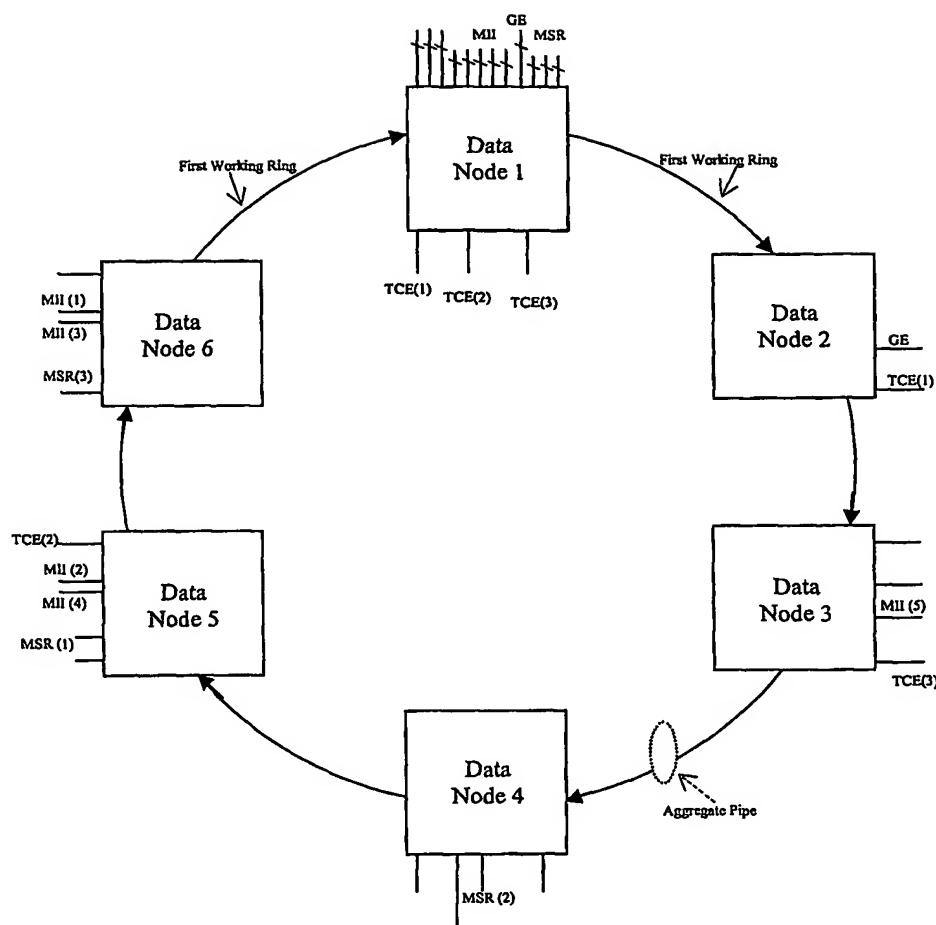
FIG. 12

**The Single Fibre Ring of RPR**
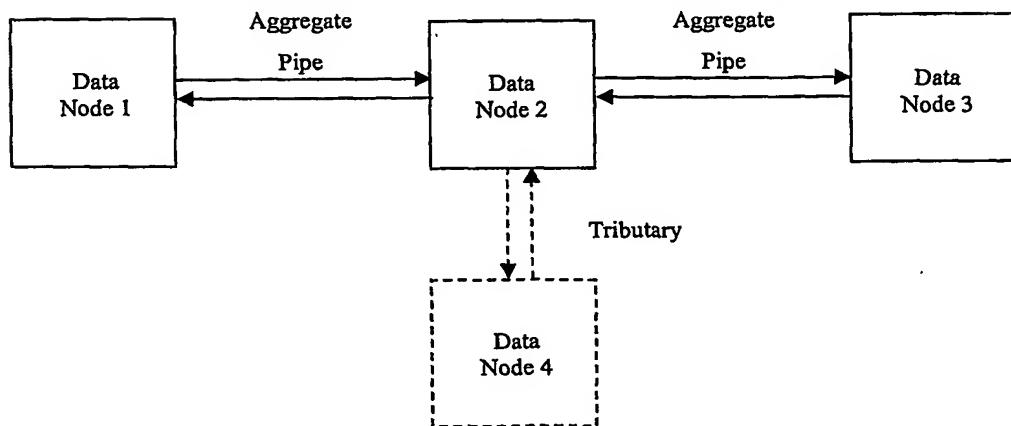
FIG. 13

**A RPR Topology, Link-type with Adding and Dropping Tributary Services**
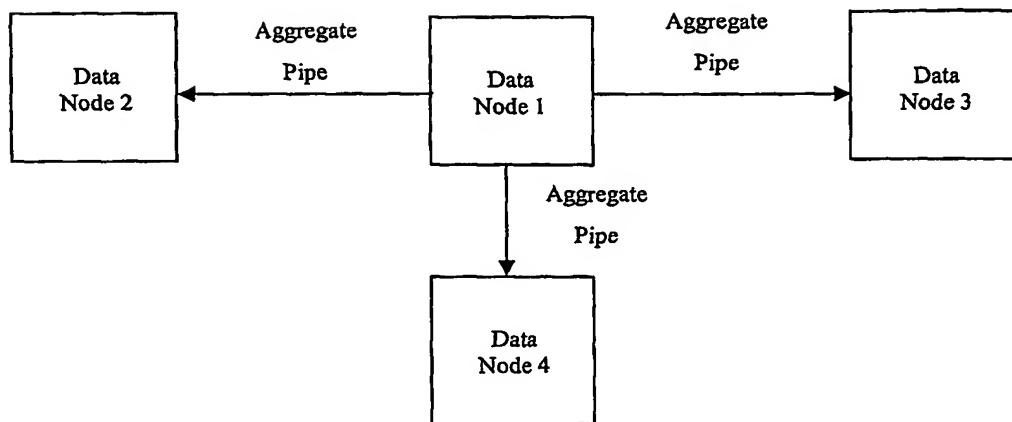
FIG. 14

**A RPR Topology, Broadcast Conn_ction to DVB Application**
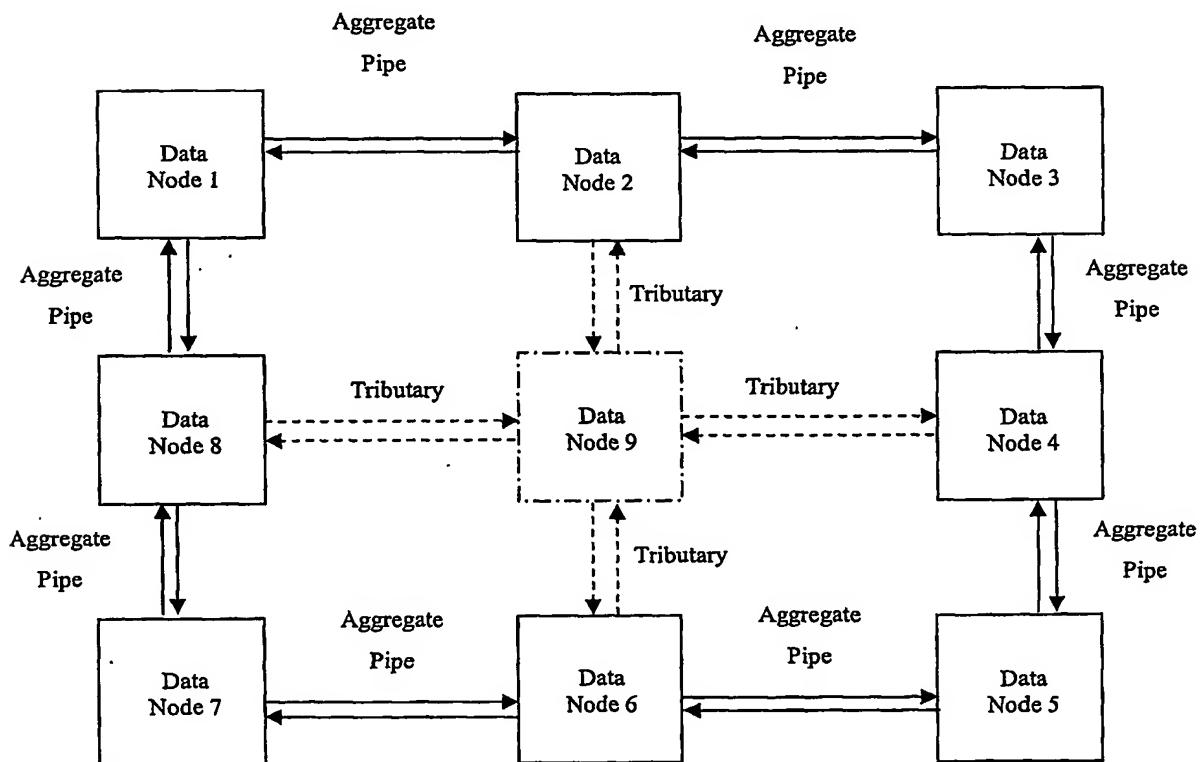

FIG. 15

A RPR Lite Topology, Pseudo-mesh Connection

Eastward   Westward

③ Tributary Adaptation & Processing ←Traffic BUS→ ① Aggregate. Processor, Routing Engine, L3 Packet Forwarding, Network Management ←Traffic BUS→ ④ Tributary Adaptation & Processing

(Working)

Tributary Adaptation & Processing ←Traffic BUS→ Aggregate. Processor, Routing Engine, L3 Packet Forwarding, Network Management ←Traffic BUS→ Tributary Adaptation & Processing

(Standby) ②

Tributary Adaptation & Processing

System Tributary Includes:

G.702 T1/E1, DS3/E3

Video Signal

Audio Signal

ISDN 64Kb/s, 384kb/s

ADSL

Cable Modem

Tributary Adaptation & Processing

⑤ CS&NM BUS

FIG. 16

The Physical Architecture of a RPR Lite node (Out-of-band CS&NM Bus)

Eastward   Westward
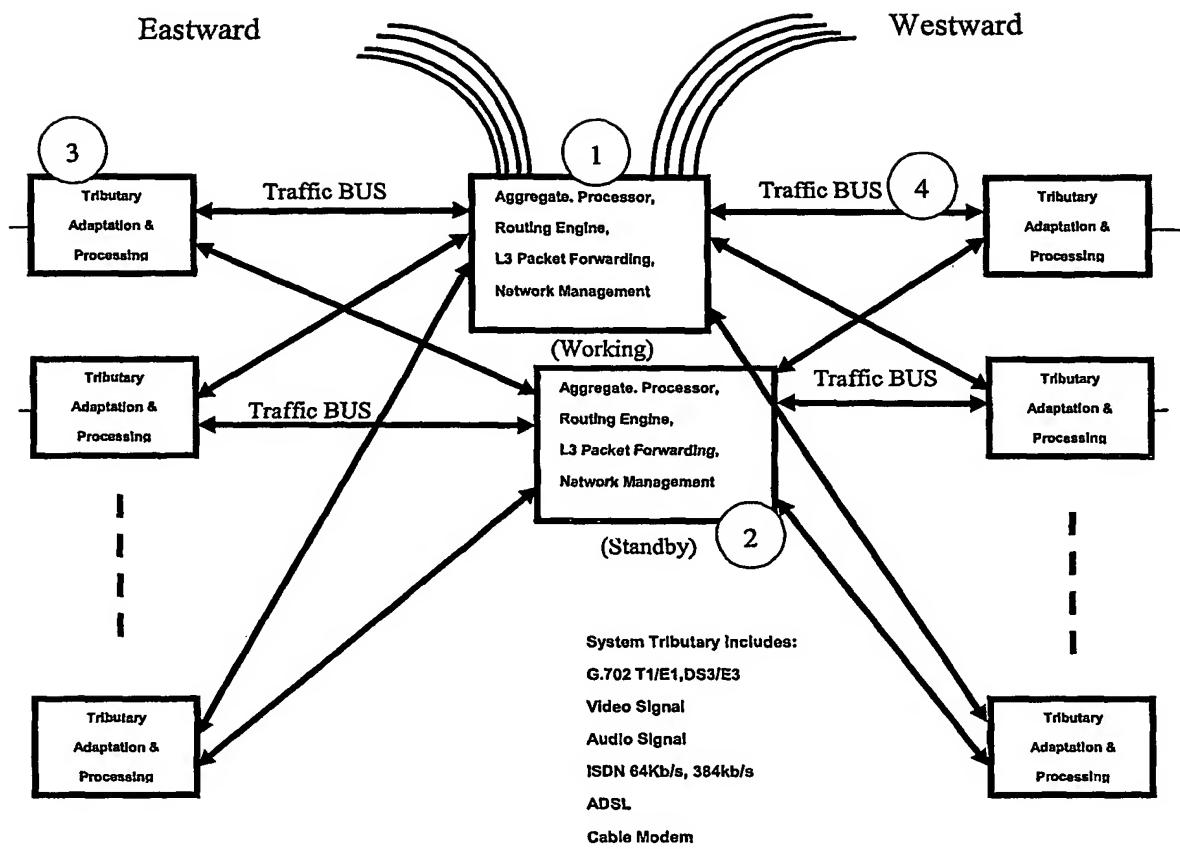
FIG. 17

The Physical Architecture of a RPR Lite node (in-band CS&NM Bus)

Aggregate circuit board   Backplane

Network management interface

Tributary circuit board   Tributary circuit board
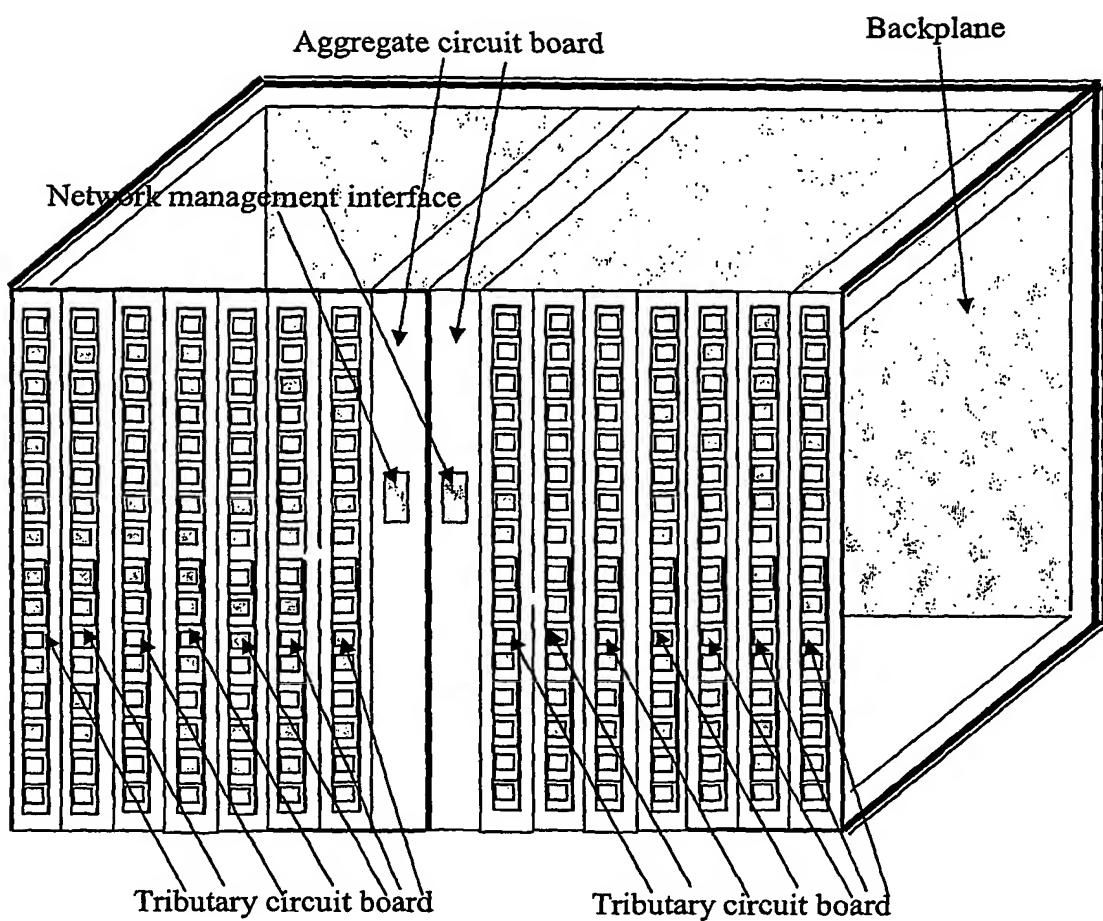
FIG. 18

Layout of system equipment of a RPR Lite node